

Title (en)  
REACTION TIME MEASUREMENT SYSTEM

Title (de)  
REAKTIONSZEIT-MESSSYSTEM

Title (fr)  
SYSTEME DE MESURE DU TEMPS DE REACTION

Publication  
**EP 1036337 A4 20030102 (EN)**

Application  
**EP 98959611 A 19981125**

Priority  
• US 9825243 W 19981125  
• US 98295297 A 19971202

Abstract (en)  
[origin: WO9932889A2] A reaction time measurement system includes a hard-wired or battery-powered accelerometer module attached to a starting block or platform to detect acceleration when a contestant moves. Although the block is grossly stationary, it undergoes slight movement and mechanical vibration, so the accelerometer produces an output signal. A filter or a processing unit in the module processes the output signal to define the reaction time or moment when the athlete starts to leave the block. Preferably the module removably attaches to the starting block by a rigid coupling, and its processor stores and annotates the accelerometer signal. A link or connector signals the reaction time, or the stored signal on request, to a central monitor at which false start detection determination are made and records created. A speaker may be attached to or included in the accelerometer module to receive a starting signal and produce a start sound at the block, so that the starting blocks at all positions emit the start sound simultaneously. The module may be used as an individual training device, in which a runner's readiness and take-off impulse are analysed as a reaction waveform, or his reaction time and starting speed recorded. For use in a track system, multiple separately addressed modules each annotate the accelerometer signal trace with one or more externally applied or synchronized timing marks. The processing unit may optionally produce a processed output indicating the interval between start signal and the detected reaction time. Preferably the processor also records the sensed acceleration output signal during the period leading up to and surrounding the start signal, and sends the stored measurement data to the monitoring station on request so that the actual acceleration curve may be visually inspected to verify when a false start determination has been made, and the data may be printed out or otherwise stored for the record. The processor may implement any of several detection rules, and threshold reaction times and/or a blanking interval may be set. Upon identification of a false start, the monitor sends an audible alarm and identifies the offending contestant, as well as displaying the time. Several wired and wireless systems provide actual local simultaneous broadcast of a starting gun sound, the immediate detection of a false start, and the identification and verification of infractions without delay.

IPC 1-7  
**G08B 23/00**

IPC 8 full level  
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Citation (search report)  
• [A] WO 9310708 A1 19930610 - FRENCH SPORTECH CORP [US]  
• See references of WO 9932889A2

Cited by  
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**WO 9932889 A2 19990701**; **WO 9932889 A3 19990916**; AT E252263 T1 20031115; AU 1537499 A 19990712; AU 743664 B2 20020131; CA 2312728 A1 19990701; CA 2312728 C 20010828; DE 69819031 D1 20031120; DE 69819031 T2 20040617; EP 1036337 A2 20000920; EP 1036337 A4 20030102; EP 1036337 B1 20031015; ES 2210845 T3 20040701; JP 2001526919 A 20011225; JP 4242065 B2 20090318; NZ 504831 A 20020726; US 6002336 A 19991214

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